with the greatest deficiency over Kauai and Oahu * * *. The means for the groups was 4.52 inches, against a 17-year mean of 7.81 inches, or only 58 per cent of the territorial 17-year mean * * *.

The mean temperature for the section exceeded the March normal over all islands of the territory, being 69.7 degrees, against a 17-year mean of 68.7 degrees. * * *—*Honolulu Times, Apr. 16, 1921.*

Peru.—The year 1920 was remarkable for its unusual rainfall. Not only was the curve for the depth of the Amazon at Iquitos higher throughout April and May than for many years, but also throughout the dry season. The lowest stage reached was some 7 feet higher than the mean minimum depth.

The exceptional inundation of April and May had destroyed much of the crops. There was a serious shortage of all staples (plaintains, beans, yucca, rice, etc.) and considerable hardship among the improvident. At no time were the sand bars of the Marañon or Amazon exposed. This of course affected the fishing industry. Seining was made much more difficult, while throw-net fishing was probably increased, due to the concentration of the mijanos, schools of fish.—*W. R. Allen in Science, Apr. 22, 1921, p. 378.*

Australia.—At the beginning of the month torrential rains fell in South Australia, causing such serious floods that ports had to be closed and traffic on the Transcontinental Railway suspended. At the same time good rain fell throughout practically the whole of New South Wales. A message received on the 17th stated that heavy rain had put out the fires in South Gippsland (Victoria).[1]

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DETAILS OF THE WEATHER OF THE MONTH OF THE UNITED STATES.

CYCLONES AND ANTICYCLONES.

By W. P. DAY, Observer.

LOWS were much above the normal in number and well distributed by type. Secondary developments were numerous, particularly of the Colorado and Texas types.

HIGHS were also in excess of the average, but about normal as to type. However, five of the Alberta HIGHS moved far to the north of the normal path and their effect was only marked along the northern border. Of the remaining two, the HIGH of the 27–30th, produced the only general cold wave.

Tables showing the number of HIGHS and LOWS by types follow:

Lows.

	Alberta.	North Pacific.	South Pacific.	Northern Rocky Mountain.	Colorado.	Texas.	East Gulf.	South Atlantic.	Central.	Total.
March, 1921.....	6.0	2.0	1.0	1.0	5.0	3.0	1.0	.....	2.0	21.0
Average number, 1892-1912, inclusive.....	3.6	2.1	1.1	0.3	1.9	1.3	0.4	0.3	0.7	11.8

Highs.

	North Pacific.	South Pacific.	Alberta.	Plateau and Rocky Mountain region.	Hudson Bay.	Total.
March, 1921.....	2.0	1.0	7.0	1.0	1.0	12.0
Average number, 1892-1912, inclusive	0.9	0.7	5.6	0.9	0.5	8.5

THE WEATHER ELEMENTS.

By P. C. DAY, Climatologist and Chief of Division.

[Weather Bureau, Washington, D. C., May 2, 1921.]

PRESSURE AND WINDS.

The absence of frequent and strong pressure variations that characterized the weather during much of the past winter persisted to an unusual extent during the first spring month. As a result the weather of March, 1921, lacked much of the blustery and changeable character so commonly attributed to that month, and in many portions of the country it took on the character of the mid-spring season.

An examination of the charts showing the average sea-level pressure and its departure from the normal discloses, as during several months preceding, a preponderance of pressure over southern districts and a consequent flow of air from southerly into northerly regions. Likewise a review of the daily weather charts shows a marked absence of strong projections from the Polar Front, and few of the HIGHS entering the northern boundaries of the United States penetrated extensively into the interior portions.

About the end of the first decade pressure had increased greatly in Alaska and the Canadian Northwest Provinces, and indications pointed to an extensive invasion of cold weather into the Northwest and interior districts of the United States. The full development of this high-pressure area was apparently obstructed by the appearance of cloudy, rainy weather in the central valleys, and it passed eastward over the more northern districts with only moderate decreases in temperature.

About the end of the second decade another high-pressure area of considerable magnitude entered the northwestern districts, and, while its influence extended farther southward into the Great Plains than that of the preceding decade, its extension eastward was likewise retarded by the development of cloudy, rainy weather, and it, too, passed along the northern border without large temperature changes, save over the more northern districts.

A third invasion of cold from the Polar Front occurred near the end of the last decade, and coming later in the month and after a long period of unusual warmth was, in a comparative way the severest of the month over the greater part of the country east of the Rocky Mountains, and actually so in the Mississippi and Ohio Valleys and portions of adjacent regions. This high pressure area first appeared in the Canadian Northwest on the morning of the 26th and by the following morning it had advanced into the upper Missouri Valley, and sharp changes to colder weather had occurred over the Great Plains as far south as the Texas Panhandle. During the following 24 hours the center of highest pressure moved to the lower Missouri Valley and the lowest temperatures of the month prevailed from central Texas and the lower Mississippi Valley northward to the Canadian border, with indications that during the following 24 hours it would advance farther southward and the attending cold seriously threaten the great early-fruit and vegetable districts of the South, where the continued warm weather had advanced vegetation far ahead of the usual condition so early in the spring. This was not fully accomplished, however, as the center of high pressure changed its course to the northeastward.